

**CLAIMS:**

1. A method of preparing a plurality of data streams to allow seamless switching  
5 between said data streams by a switching device, wherein said switching device includes data stream buffering for an output data stream, said method comprising the steps of:

providing a plurality of data streams, said data streams including data which is divided into segments, wherein said segments include synchronized starting points and end points on all of said plurality of data streams;

10 increasing a data rate of said plurality of data streams at a time before an end point of a segment; and

providing gaps in said plurality of data streams between said end points and said starting points.

15 2. The method of claim 1 further including the step of inserting trigger gap indicators in said plurality of data streams proximate said end points.

3. The method of claim 1, wherein the step of increasing a data rate includes increasing a bandwidth of said plurality of data streams.

20 4. The method of claim 1, wherein said plurality of data streams are multiplexed.

5. The method of claim 4 wherein the step of increasing a data rate includes changing the multiplexing for said plurality of data streams.

25 6. The method of claim 1, wherein the step of increasing a data rate includes compressing said data of said plurality of data streams.

30 7. The method of claim 1, wherein said plurality of data streams include multimedia data streams.

8. The method of claim 7, wherein said plurality of data streams include MPEG-2 encoded data streams.

5 9. The method of claim 8, wherein said plurality of data streams are multiplexed in an MPEG-2 transport stream.

10. The method of claim 9, wherein the step of increasing a data rate includes changing the multiplexing for said MPEG-2 transport stream.

10 11. The method of claim 7, wherein said plurality of data streams include AC3 encoded data streams.

15 12. The method of claim 1 further including the step of switching from one of said plurality of data streams to another one of said plurality of data streams at an end point of a segment by said switching device.

13. A system for preparing a plurality of data streams for transmission to allow a receiver receiving said transmitted data streams to seamlessly switch between said transmitted data streams; said system comprising:

a content preparation component, coupled to a source of said plurality of data streams, to  
5 encode content in said plurality of data streams with synchronized starting points and end points common to all of said plurality of data streams;

a gap creation component, coupled to said content preparation component, said gap creation component to insert gaps in said plurality of data streams between said end points and said starting points;

10 a data rate control component, coupled to said gap creation component, to dynamically control data rates of said plurality of data streams.

14. The system of claim 13 further including:

a trigger insertion component, coupled to said data rate control component, said trigger  
15 insertion component to insert trigger messages into said plurality of data streams.

15. The system of claim 13 wherein said plurality of data streams are transmitted using an MPEG-2 compliant transport stream, and said data rate control component controls data rates of said data streams in said transport stream.

16. A switching apparatus, to switch between a plurality of multiplexed data streams, wherein said data streams are prepared such that each data stream includes synchronized starting points and end points, with gaps between end points and starting points, and wherein the data rate of the data streams is increased at a time before the synchronized end points, and the data rate for the data streams is decreased at a time after the gaps, said switching component comprising:

a switch controller component;

a data stream receiver component, to receive the multiplexed data streams;

a demultiplexer component, coupled to said data stream receiver component and said

switch controller component, to select at least one of said multiplexed data streams in response to said switch controller component;

a buffer component, coupled to said a demultiplexer component, to receive said selected at least one data stream; and to buffer said at least one data stream when said data rate for said data stream is increased.

17. The switching apparatus of claim 16 wherein said switching apparatus is a receiver for MPEG encoded media streams.

18. The switching apparatus of claim 16 wherein said switching apparatus is a set top box.